REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-4, 6-13, and 15-21 are pending in the present application. Claims 1 and 15 are amended, Claims 5 and 14 are canceled, and Claim 21 is added by the present amendment. Support for additions to the claims can be found in the claims as originally filed.[1] Thus, no new matter is added.

In the outstanding Action, Claims 1-3, 5-6, 10-12, 15 and 20 were rejected under 35 U.S.C. §103(a) as unpatentable over Kaplan et al. (U.S. Patent No. 6,270,921 B1 herein referred to as "Kaplan") in view of Okazaki et al. (JP401059782A herein referred to as "Okazaki"); Claims 4 and 19 were rejected under 35 U.S.C. §103(a) as unpatentable over Kaplan in view of Okazaki as applied to Claims 1 and 15, and further in view of Arao et al. (WO 2063703 A1 herein referred to as "Arao") evidenced by Rosato et al. (Injection molding Handbook; 3rd Edition; Rosato, Dominick V.; Rosato, Donald V.; M.G.; 2000; Springer-Verlag, herein referred to as "Rosato"); Claim 7 was rejected under 35 U.S.C. §103(a) as unpatentable over Kaplan in view of Okazaki as applied to Claim 1, and further in view of Kelsey et al. (U.S. 2002/0132161 A1 herein referred to as "Kelsey"); Claims 8-9 were rejected under 35 U.S.C. §103(a) as unpatentable over Kaplan in view of Okazaki as applied to Claim 1, and further in view of Yoshino et al. (JP02060052A herein referred to as "Yoshino"); Claims 13-14 were rejected under 35 U.S.C. §103(a) as unpatentable over Kaplan in view of Okazaki as applied to Claim 1, and further in view of Abraham et al. (J. Electrochem. Soc., Vol. 143, No. 1, January 1996; cited in Information Disclosure Statement, herein referred to as "Abraham"); and Claims 16-18 were rejected under 35 U.S.C. §103(a)

[1] See specification page 20, lines 20-22; page 22, line 20 - page 24, line 9; page 26, line 24; page 27, lines 20-21.

as unpatentable over Kaplan in view of Okazaki as applied to Claims 1 and 15, and further in view of Tinker (U.S. Patent No. 5,506,067).

Addressing now the rejection of Claims 1-3, 5-6, 10-12, 15 and 20 under 35 U.S.C. §103(a) as unpatentable over Kaplan in view of Okazaki, this rejection is respectfully traversed.

Amended Claim 1 recites,

> An air battery comprising:
> a battery container having a surface in which air pores are formed;
> an electrode group provided in the battery container and including an air positive electrode, a negative electrode containing a negative electrode active material which intercalates and deintercalates lithium ions, and a separator provided between the air positive electrode and the negative electrode;
> a nonaqueous electrolyte; and
> a laminated sheet including a barrier film which is provided between the surface of the battery container and the air positive electrode of the electrode group, and of which oxygen permeation coefficient is 1×10^{-14} mol·m/m^2·sec·Pa or less, the barrier film being formed of thermoplastic resins and having a thickness of 2 to 100 μm, and a gap holding member which is laminated on the barrier film and is opposite to the air positive electrode, and the gap holding member comprising at least one selected from the group consisting of a porous film, a nonwoven fabric, and a woven fabric,
> wherein the air pores of the battery container are closed by the laminated sheet (emphasis added).

Amended Claim 15 includes similar features with regard to the barrier film being formed of thermoplastic resins and having a thickness of 2 to 100 μm, a negative electrode containing a negative electrode active material which intercalates and deintercalates lithium ions, and a nonaqueous electrolyte.

Kaplan describes a prismatic air recovery battery.[2] Kaplan further describes that the battery can include a cathode having at least one air access opening having a central

[2] see Kaplan, Abstract.

longitudinal axis, wherein the cathode includes a major surface normal to the longitudinal axis of the opening.[3]

Kaplan, however, does not describe or suggest **the barrier film being formed of thermoplastic resins and having a thickness of 2 to 100 μm**, as is recited in amended Claim 1.

In other words, as the outstanding Action acknowledges on page 4, Kaplan discloses a membrane, but does not disclose the oxygen permeation coefficient of the membrane. However, the membrane described in Kaplan is different from the barrier film disclosed by Applicant's claimed invention. Specifically, Kaplan describes that the membrane is an air-permeable material such as polytetrafluoroethylene (PTFE).[4] Further, Kaplan describes that the internal structure of battery 300 remains substantially the same as battery 10, thus indicating that the membrane 390 descried in column 7, line 4 of Kaplan is a member similar to membrane 70.[5] Hence, both the membrane 70 and the membrane 392 described in Kaplan are formed of PTFE, which is not analogous or similar to **the barrier film being formed of thermoplastic resins and having a thickness of 2 to 100 μm**, as recited in Applicant's Claim 1.

Furthermore, Kaplan does not describe or suggest **a negative electrode containing a negative electrode active material which intercalates and deintercalates lithium ions**, which is recited in amended Claim 1. In contrast to Applicant's claimed invention, Kaplan describes using an anode material 40 containing zinc.[6] However, this anode material containing zinc does not contain a negative electrode active material which intercalates and deintercalates lithium ions.

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[3] Id.
[4] see Kaplan, Col. 5, lines 12-13.
[5] see Kaplan, Col. 6, lines 66-67.
[6] see Kaplan, Col. 1, lines 27-30 and Col. 3, lines 42-43.

Moreover, Kaplan does not describe or suggest a nonaqueous electrolyte, as is recited in amended Claim 1. In contrast to Applicant's claimed invention, Kaplan describes a potassium hydroxide aqueous solution as an electrolyte.[7] This potassium hydroxide **aqueous** solution as an electrolyte is not a **nonaqueous** electrolyte as described by Applicant's claimed invention.

Nevertheless the outstanding Action cites Okazaki as curing the deficiencies of Kaplan with regard to the claimed invention.

Okazaki describes a battery which uses a metal such as zinc, magnesium, and aluminum, or a negative electrode active material such as alcohol, hydrazine, and hydrogen.[8]

Okazaki, however, does not describe or suggest **the barrier film being formed of thermoplastic resins and having a thickness of 2 to 100 μm**, as is recited in amended Claim 1.

Specifically, Okazaki describes an oxygen selectively permeable composite film 11 mainly composed of polymethylpentene, having a thickness not larger than 0.3 μm.[9] Additionally, the oxygen selectively permeable composite film shown in Okazaki has a thickness of **0.3 μm or less**, as shown in Table 1. This, however, is much smaller and therefore not equivalent to Applicant's claimed barrier film, which has a thickness of **2 to 100 μm** as recited in amended Claim 1.

Applicants note that this is an important distinction because the film thickness is used to determine the rate at which oxygen passes through the film. Specifically, the rate at which oxygen passes through a film is defined by the value obtained by dividing the oxygen permeable coefficient by the film thickness. Therefore, because the thickness of the oxygen selective permeable composite film described in Okazaki is smaller than the thickness of the

[7] see Kaplan, Col. 1, lines 27-30 and Col. 3, lines 45-46.
[8] see Okazaki, page 2, lines 1-6.
[9] see Okazaki, page 2, line 20 - page 3, line 9.

barrier film, the rate at which oxygen passes through the film is greater than the defined range of the barrier film in Applicant's claimed invention. Thus, from the viewpoint of the rate at which oxygen transmits through a film, the oxygen selectively permeable composite film described in Okazaki is not analogous to the barrier film in Applicant's claimed invention.

Furthermore, Okazaki does not describe or suggest **a negative electrode containing a negative electrode active material which intercalates and deintercalates lithium ions**, which is recited in amended Claim 1. In contrast to Applicant's claimed invention, Okazaki describes the use of a metal such as zinc, magnesium and aluminum, or a negative electrode active material such as alcohol, hydrazine, and hydrogen.[10] However, the use of a metal such as zinc, magnesium and aluminum, or a negative electrode active material such as alcohol, hydrazine, and hydrogen is not the same as a negative electrode active material which **intercalates and deintercalates lithium ions**.

Additionally, Okazaki does not describe or suggest a **nonaqueous electrolyte**, as is recited in amended Claim 1. Specifically, in contrast to Applicant's claimed invention, Okazaki describes using an electrolytic solution such as an alkaline aqueous solution.[11] This electrolytic solution such as an alkaline **aqueous** solution is not a **nonaqueous** electrolyte as is recited in Applicant's claimed invention.

Thus, for at least the above noted reasons, Applicants respectfully submit that Claims 1-3, 5-6, 10-12, 15 and 20 patentably distinguish over Kaplan and Okazaki individually or in combination.

Furthermore, with respect to amended Claim 1 and 15, Applicants respectfully submit that the further cited Arayo, Rosato, Kelsey, Yoshino, Abraham, and Tinker do not cure the above noted deficiencies of Kaplan and Okazaki with respect to the claimed invention.

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[10] see Okazaki, page 2, lines 1-6.
[11] see Okazaki, page 2, lines 1-6.

For instance, Yoshino describes a battery which uses a metal such as zinc, magnesium, and aluminum, or a negative active material such as alcohol, hydrazine, and hydrogen.[12]

However, Yoshino does not describe or suggest **the barrier film being formed of thermoplastic resins and having a thickness of 2 to 100 μm**, as is recited in amended Claim 1.

Specifically, Yoshino describes that the thickness of the film of poly-(2, 2' - dimethylphenylene oxide) is not higher than 1.0 μm, as shown in Table 1.[13] This, however, is much smaller and therefore not equivalent to Applicant's claimed barrier film, which has a thickness of **2 to 100 μm** as recited in amended Claim 1.

Additionally, Yoshino does not describe or suggest **a negative electrode containing a negative electrode active material which intercalates and deintercalates lithium ions**, which is recited in amended Claim 1. In contrast to Applicant's claimed invention, Yoshino describes the use of a metal such as zinc, magnesium, and aluminum, or a negative active material such as alcohol, hydrazine, and hydrogen. However, the use of a metal such as zinc, magnesium, and aluminum, or a negative active material such as alcohol, hydrazine, and hydrogen is not the same as a negative electrode active material which **intercalates and deintercalates lithium ions**.

Finally, Yoshino does not describe or suggest a nonaqueous electrolyte, as is recited in amended Claim 1. Specifically, in contrast to Applicant's claimed invention, Yoshino describes using an electrolytic solution such as alkaline aqueous solution.[14] This electrolytic solution such as alkaline **aqueous** solution is not a **nonaqueous** electrolyte as is recited in Applicant's claimed invention.

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[12] see Yoshino, page 2 lines 7-12.
[13] see also Yoshino, page 5, lines 8-17.
[14] see Yoshino, page 2, lines 7-12.

Consequently, in view of the present amendment and in light of the above discussion, the outstanding grounds for rejection are believed to have been overcome. The application as amended herewith is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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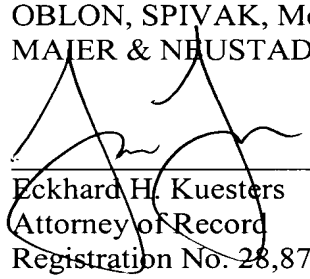

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